DOCUMENT RESUME

ED 405 752 HE 029 773

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TITLE Faculty Stress: The Influences of Institutional Characteristics. ASHE Annual Meeting Paper.
PUB DATE 1 Nov 96
NOTE 20p.; Paper presented at the Annual Meeting of the Association for the Study of Higher Education (Memphis, TN, October 31-November 3, 1996).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150) -- Statistical Data (110)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *College Faculty; Faculty Workload; Full Time Faculty; Higher Education; Institutional Characteristics; Multiple Regression Analysis; National Surveys; Predictor Variables; *Quality of Working Life; Statistical Analysis; *Stress Variables; Tables (Data); Teacher Attitudes; Tenure
IDENTIFIERS Academic Pressure; Academic Stress; ASHE Annual Meeting; Higher Education Research Institute

ABSTRACT

This study of faculty stress used data from the Higher Education Research Institute (HERI) survey administrated in the 1992-93 academic year. The total data set includes survey information from more than 43,000 faculty at nearly 300 higher education institutions in the United States. For this study, data for 29,064 full-time teaching faculty were used. Institutional characteristics, personal variables, professional status, and stress variables were analyzed. The dependent variable was the general stress level of faculty respondents. Respondents indicated the level of stress they experienced in the past two years. A regression analysis was used to determine the impact of institution size, control, selectivity and type on the reported faculty stress level. Several factors were found to be significant in predicting overall stress. After controlling for personal characteristics and stress attributed to work-related conditions, institutional variables did not appear to be significant predictors of faculty stress. Among professional status variables, only academic rank was identified as a significant predictor of general stress with higher rank predicting higher stress. Tables include profiles of respondents, independent variables, composition of occupational stress factors, mean level of stress by institutional characteristics, and results of regression analysis for variables predicting faculty stress. (Contains 17 references.) (JLS)

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ED 405 752

Faculty Stress: The Influence of Institutional Characteristics

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This paper was prepared for presentation at the annual meeting of the
Association for the Study of Higher Education
November 1, 1996
Memphis, Tennessee

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This paper was presented at the annual meeting of the Association for the Study of Higher Education held in Memphis, Tennessee, October 31 - November 3, 1996. This paper was reviewed by ASHE and was judged to be of high quality and of interest to others concerned with higher education. It has therefore been selected to be included in the ERIC collection of ASHE conference papers.

Faculty Stress: The Influence of Institutional Characteristics

Dimensions of stress in the workplace are receiving increased attention as workers manage both professional and personal responsibilities in a competitive and complex environment. Within higher education specifically, pressure is mounting from the general public, as well as from state and federal governments, to increase productivity and efficiency. This pressure will likely intensify the stress generally experienced by faculty. Stress in the workplace is generally considered to result when conditions in the work environment are difficult for individuals to manage (Gmelch, Lovrich, and Wilke, 1984). A recent survey at a research university, for example, found that most faculty described their job as at least fairly stressful due to competing demands (Olsen and Maple, 1993). Increased understanding of those job conditions which significantly increase stress levels will be important to attracting and retaining productive faculty.

Review of literature

The literature related to faculty stress addresses components of workplace stress, the relationship between personal factors and stress, and the impact of organizational characteristics on faculty stress.

Components of workplace stress

Research of occupational stress in higher education has focused largely upon stressors related to workplace factors (Gmelch et al., 1984; Richard & Krieshok, 1989; Olsen, 1993; Smith, Anderson, and Lovrich, 1995) and personal factors (Dey, 1994; Smith and Witt, 1993). Studies of these influences have yielded fairly consistent results. Tenure, rank, salary, time, and discipline have been found to correlate with the reported level of perceived stress.

Gmelch et al. (1984), based on a faculty survey (n=1,220) conducted at 80 doctoral granting institutions, found that 60% of the stress faculty experience is a result of environmental factors, that is factors associated with demands of the workplace. Job situations identified as contributing the most to faculty stress were 1) imposing excessively high expectations upon oneself, 2) securing financial support for research, and 3) having insufficient time to keep abreast of current developments in one's field. Other factors that had a strong impact on occupational

stress included receiving low pay for work done, striving for publications, having job demands interfere with other personal activities, and feeling continually overloaded with work.

A subsequent article based on results from this same study, (Gmelch, Wilke, and Lovrich, 1986) used factor analysis to study how elements of faculty stress might cluster. They found five stress factors which seemed to affect various populations of faculty differently: reward and recognition, time constraints, departmental influence, professional identity, and student interaction. Untenured faculty perceived higher levels of stress than tenured faculty for all five factors. Also, stress classified within the "reward and recognition" and "student interaction" factors was perceived differently by discipline.

In a longitudinal study at a public research university, Olsen (1993) examined the experiences of first- and third-year faculty, including the particular job experiences associated with stress. The results from this study were consistent with previous research. Olsen found that job characteristics such as salary, job security, recognition, and conflicting pressures on time were most often cited by faculty as sources of work-related stress.

Smith, Anderson, and Lovrich (1995) examined previously published studies on faculty stress to identify the ten most commonly cited stressors. These they divided into task-based stress (frequent interruptions, meetings take too much time), role-based stress (unclear responsibilities, unclear criteria for evaluating research and publications), and person/system-based stress (high self-expectations, pressure to compete with colleagues). In their study of workplace stressors at a single land-grant university, Smith et al. found that associate professors reported higher levels of task-based stress than assistant and full professors and again stress levels were found to vary by discipline.

Faculty stress and personal factors

In a 1989 study, Sorcinelli found that women tended to have a higher correlation between life and work satisfaction than men, although the correlation was high for both genders. Also, a significant correlation was found between job and nonwork satisfaction for both men and women. This and other studies began to direct research on the significant effect of personal life on professional life. While earlier research had found significant differences between men and women in terms of levels of perceived stress (Gmelch et al., 1986), the focus began to turn to personal factors other than gender. In the following studies personal factors, such as level of

household responsibilities, child care, elder care, race, and gender, were included to determine their impact, if any, upon the overall level of stress.

In her five-year, longitudinal study of one cohort of new faculty, Sorcinelli (1992) identified five "stress points" or clusters of significant stressors which included both organizational and individual factors: balancing work and life outside of work, not enough time, inadequate feedback and recognition, unrealistic expectations, and lack of collegiality.

Regarding race, Smith and Witt (1993) found that stress levels were significantly higher among African Americans than white faculty members on measures of research and service variables. Findings from the study suggest that African-American faculty members are often expected to spend more time advising and mentoring students, as well as serving on numerous committees, compared to their white colleagues. These added commitments then cause stress, largely due to a lack of time available for continuing research and teaching responsibilities.

Again considering gender, Blix, Cruise, Mitchell, and Blix (1994), in a study of 158 faculty in the California State University System, found that female faculty reported higher stress levels than males. A study conducted by Richard and Krieshok (1989) also found that female faculty reported higher strain scores than male faculty and that strain increased for females as they moved up in rank.

Dey's (1994) exploratory study provides a comprehensive examination of faculty stress related to both workplace and personal factors. This study, which was based on a sample of 35,000 faculty from nearly 400 two-year colleges, four-year colleges, and universities, also examined differences across certain groups of faculty according to tenure, status, race, and gender. The study again found that faculty experience different levels and sources of stress based on their race, tenure status, and gender. For example, females tended to report teaching load, research or publishing responsibilities, and household duties as sources of extensive stress more frequently than did men. Also, reports of stress from subtle discrimination were found to vary widely across groups. White women and nonwhites were much more likely to report this as a source of significant stress than were white men. Child care, care of an elderly parent, children's problems, and marital friction were among those listed by *all* respondents as extensive sources of stress.

Dey's work and others alert researchers to the need to examine the issue by sub-populations rather than treating faculty as a homogeneous population. All faculty do not respond to stressors in the same way. Various factors in the workplace and home, including the need to secure financing for research, committee responsibilities, and household responsibilities, affect tenured and non-tenured, male and female, white and non-white individuals in different ways.

Little research currently exists, however, regarding other institutional characteristics which might influence levels of faculty stress. Specifically, few studies have examined the role of institutional size, control, and selectivity in determining faculty levels of stress.

Impact of institutional characteristics on faculty stress

Each institution has its own unique culture (Austin, 1994). However, it also derives substantial identity simply by virtue of its institutional type (Clark, 1985). For example, comprehensive institutions tend to focus on undergraduate education, but also seek to emulate the major universities. Professors at these institutions may therefore find themselves trying to conduct research with minimal support, while at the same time trying to meet the demands of substantial teaching responsibilities. Faculty at liberal arts institutions are often expected to emphasize both teaching and student development, but may also strive to maintain ties to their discipline by conducting scholarly research (Austin, 1990; Austin, 1994). Might these differences among institutional types affect faculty members' perceived levels of stress?

Blackburn and Bently (1993) examined the relationship between faculty stress level and research productivity. A point of interest in their study concerned how the institutional environment might lower stress levels and thus raise research productivity. The researchers found that stress levels tended to be higher for those faculty working in Research I and Research II institutions, based on the Carnegie Classification. Concerned with research productivity, the authors wrote that "those who choose to work in the research universities can be expected to have higher self-imposed levels of stress than faculty in other institutional types" (Blackburn & Bently, 1993, p. 742).

In addition to institutional type, literature also exists regarding the impact of institutional size upon the level of stress and degree of work satisfaction. Small work environments are more likely to be less formal and more personal, while larger work environments are likely to have formal structures, rules, and substantial administrative layers. Also, smaller workplaces are more

likely to be undermanned, which often leads to more complex work roles, more extensive coordination of work among employees, and workers perceiving themselves as more needed. Work socialization theory suggests that this complexity leads to greater work satisfaction (MacDermid, Williams, Marks, and Heilbrun, 1994).

The literature seems to show that institutional characteristics such as size and type may indeed impact faculty stress levels. By including these factors, as well as level of selectivity and control, this study sought to further our overall understanding of what contributes to faculty stress. Our question is whether institutional size, control, and type also have a significant impact on the overall level of stress experienced by full-time faculty. Do faculty at large institutions experience more stress than those at smaller institutions? Are there more pressures at very selective institutions than at less selective institutions?

Methodology

In our study of faculty stress, we applied regression analysis to faculty data from the Higher Education Research Institute in order to determine the variance in faculty stress that might be predicted by institutional characteristics.

Data set and sample

The Higher Education Research Institute (HERI) of the University of California, Los Angeles, has administered three extensive national surveys of college and university faculty. (Results of the third survey were released as we prepared a final revision of this paper.) For this study, we accessed data gathered in the second survey, which was administered in the 1992-93 academic year. The data set includes survey information gathered from more than 43,000 faculty at nearly 300 higher education institutions in the United States (Dey, Ramirez, Korn, & Astin, 1993). Although the HERI data includes full- and part-time faculty, we felt that those who are fully employed as faculty were most appropriate for this study. Part-time instructors are likely to be excluded from traditional faculty rank and tenure processes, have significantly different teaching and research responsibilities, and have varying degrees of involvement with the educational institution. While we acknowledge that the circumstances of part-time faculty may certainly be stressful, a separate study is warranted toward better understanding of that group.

Respondents who identified their principal work activity as teaching were retained in the data set, excluding those who indicated that administration, research, service, and other roles

were primary. We have chosen to consider faculty in the traditional ranks of professor, associate professor and assistant professor. Our sample includes 29,064 full-time, teaching faculty.

Insert Table 1 about here.

Variables

Institutional characteristics. Size, selectivity, control, and program level are the institutional characteristics in which we are interested. The data set includes 41 values for a single variable representing institutional stratification, each value reflecting institutional control (public or private), program level (two-year college, four-year college, or university), and selectivity (very low to very high). This stratification variable was recoded to create two new variables, control and selectivity, and two dummy variables to represent two-year college and university program level. (See Table 2 for operational definitions of all variables employed in the study.)

Insert Table 2 about here.

Personal variables. Three out of ten respondents are women. Over 90% of the respondents are white, and because the proportion of respondents in any other ethnic group was very small, we used a single dichotomous variable to represent race.

Professional status. Faculty rank, tenure, and salary are mediating variables influenced by institutional reward structures but varying by individual. The traditional ranks of full professor, associate professor, and assistant professor are included.

Stress variables. Ten additional survey items were selected, eight of which asked faculty whether a particular job facet contributed to stress. Time pressures and subtle discrimination were also included in the analysis. For each of these stress variables, respondents were directed to "indicate the extent to which each of the following has been a source of stress to you during the last two years." Available responses are "not at all," "somewhat," and "extensive."

We used exploratory factor analysis to reduce the number of variables identified as workplace stressors. All of the items loaded with one of the factors (.35 or above) but one factor

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included only two variables, research and subtle discrimination. We chose to remove the subtle discrimination variable from the analysis, then ran the analysis again. Two factors were created, and a test of reliability yielded satisfactory results. Subtle discrimination was considered separately. (See Table 3.)

Teaching and research. The first factor includes time pressures plus four variables representing job components that faculty typically consider primary to their role: teaching load, research or publishing demands, review and promotion process, and students.

Administrative tasks. The second factor includes stressors related to job responsibilities typically viewed by faculty as detracting from their primary role. The variables included in this factor are faculty meetings, institutional procedures and red tape, committee work, and colleagues.

Insert Table 3 about here.

Dependent Variable. The dependent variable in this study was general stress level of the faculty respondents. Respondents indicated the level of stress they experienced in the past two years. The mean of general stress for all respondents is 2.216, where 1 = little, 2 = moderate, and 3 = extreme.

Insert Table 4 about here.

Results

We used regression analysis to determine the impact of institutional size, control, selectivity, and type on the reported faculty stress level. Controlling for personal characteristics, subtle discrimination, professional status, teaching and research, and administrative tasks, institutional characteristics made up the final block in the regression equation.

The results of the regression analysis appear in Table 5. When all variables were included in the equation through forced block regression, several were found to be significant in predicting overall stress. After controlling for personal characteristics and stress attributed to work-related

conditions, institutional selectivity, size, control, and program level -- the institutional variables of interest to this study -- do not appear to be significant predictors of faculty stress.

Insert Table 5 about here.

Although institutional characteristics appear not to predict general faculty stress, other interesting findings emerged from the regression analysis. Sex and subtle discrimination were revealed as significant predictors, indicating higher general stress levels for faculty who are women, or who experience stress attributed to discrimination. Race (1= nonwhite, 2= white), which was significant after Block 1 was entered ($t = -1.970$, $p < .05$) was no longer significant after subtle discrimination entered the equation in Block 2.

Among the professional status variables, only academic rank was identified as a significant predictor of general stress. Higher faculty rank predicts higher stress, contrary to conventional assumptions. We offer two possible explanations: Because nearly one-third of the faculty in this study are associate professors, they are still affected by the promotion process and all of the potentially stressful expectations related to professional advancement. In addition, academic and administrative demands may increase as faculty move along in the rank and tenure process.

The workplace stressors were both significant in predicting stress. Among the variables considered in this study, teaching and research and administrative tasks together explain the largest proportion of the variance in general stress.

This study is limited partly by the data set we chose to use and our selection from among an enormous array of variables. We did not consider the amount of time faculty spent in each of their various workplace roles, nor did we relate faculty satisfaction to stress level. Future research might look more closely at the relationship of these variables to faculty stress. We did not attempt to stratify the various institutional types and consider stress predictors for each separately. Strong correlations between the institutional characteristics also warrant additional study.

Conclusions and Implications

While we had expected that institutional characteristics would help to explain the level of stress experienced by faculty, the regression analysis did not confirm that expectation. Previous studies found salary and tenure to be significant predictors of stress, but institutional policies and procedures -- particularly those related to promotion and tenure -- may inherently carry the influence of size, selectivity, control, and status as a community college, four-year college, or university. Scholarly work and administrative duties appear to be key contributors to general stress among college and university faculty. The importance faculty assign to teaching and research over administrative assignments, and perhaps the time expended, may help to explain the relative strength of each of these factors in explaining general stress.

Organizationally, we conclude that stressors related to role and task affect faculty within the working environment, where subtle discrimination as well as institutional policies, procedures, and reward structures impact them most directly. Efforts intended to respond to faculty stress must be implemented at all levels of the institution, but particularly at the departmental level, where faculty spend their time. We did not compare stress influences by academic discipline, and recommend that additional research be devoted to understanding disciplinary influences on stress.

This study explains 28% of general stress reported by faculty, suggesting that additional attention should be directed toward the impact of stressors *beyond* the workplace. Personal stressors, such as those related to family and household responsibilities, were beyond the scope of this study. The research of Sorcinelli and Near (1989) suggests that the boundaries between work and life away from work are not clearly drawn for college and university faculty, and that stress in one setting may affect the other. Additional research may clarify these relationships.

The HERI Faculty Survey released in September 1996 indicates that the top four sources of faculty stress are time pressures, lack of personal time, institutional procedures and "red tape," and managing household responsibilities, consistent with these conclusions (*Chronicle of Higher Education, 13 September 1996).* As institutions seek to attract and maintain productive faculty, greater attention to the role of stress among college and university faculty is warranted.

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Table 1. Profile of Respondents

Characteristic	Number of Faculty Reporting	Percent
Personal Characteristics		
Women	8,795	30.3
Men	20,269	69.7
White	26,343	90.6
Nonwhite	2,721	9.4
Tenured	16,605	63.4
Assistant Professor	9,375	32.3
Associate Professor	8,916	30.7
Full Professor	10,773	37.1
Institutional Characteristics		
Private	12,972	44.6
Public	16,092	55.4
Community College	2,435	8.4
Four-year College	18,845	64.8
University	7,784	26.8
Low selectivity	10,548	38.2
Medium selectivity	9,110	32.9
High selectivity	7,994	28.9
<1,000 Students	2,186	7.6
1,000 - 5,000 Students	13,900	58.6
5,001 - 10,000 Students	7,557	26.4
> 10,000 Students	4,961	17.3
Total respondents	29,064	

Table 2. Independent Variables

Variable Group	Variable Name	Definition	Coding
Institutional Characteristics	Size	Number of full-time undergraduate students	Number of undergraduate students
	Selectivity	Student selectivity	0 = very low 1 = low 2 = medium 3 = high 4 = very high
	Control	Public or private institutional control	1 = public 2 = private
	Community College	2-year college	1 = no 2 = yes
	University	University	1 = no 2 = yes
Personal Variables	Female	Sex of faculty respondent	1 = male 2 = female
	White	Race of faculty respondent	1 = nonwhite 2 = white
Professional Status	Tenure	Tenure status of respondent	1 =nontenured 2 = tenured
	Faculty Rank	Faculty rank of respondent	1 = full professor 2 = associate professor 3 = assistant professor

	Salary	12-month salary	Dollars, in thousands; 12 values range from <$20K to >$150K
Workplace Stressors	Teaching and research	Factor including teaching load, research or publishing demands, review and promotion process, students, and time pressures	
	Administrative tasks	Factor including faculty meetings, institutional procedures and red tape, committee work, and colleagues	

Table 3. Composition of Occupational Stress Factors

Scale/Item	Factor Loadings	Alpha Reliability
TEACHING AND RESEARCH		.605
Research or publishing demands	.766	
Time pressures	.647	
Review and promotion process	.609	
Teaching load	.591	
Students	.373	
ADMINISTRATIVE TASKS		.679
Faculty meetings	.868	
Committee work	.730	
Colleagues	.650	
Institutional procedures and red tape	.558	

Table 4 Mean Level of Stress, by Institutional Characteristics

Characteristic	Scale	Mean	Standard Deviation	n
Selectivity	Very low	2.2352	.6645	506
	Low	2.1980	.6542	9,839
	Medium	2.2270	.6450	8,931
	High	2.2195	.6495	5,878
	Very high	2.2292	.6421	1,937
Level	Two-year college	2.1718	.6555	2,381
	Four-year college	2.2241	.6488	18,436
	University	2.2085	.6461	7,649
Size, in students	Fewer than 1,000	2.2615	.6391	2,138
	1,000 to 5,000	2.2219	.6456	13,609
	5,001 to 10,000	2.2108	.6511	7,402
	10,001 to 15,000	2.1945	.6574	2,673
	More than 15,000	2.1795	.6510	2,200
Control	Public	2.2024	.6539	15,767
	Private	2.2318	.6420	12,699

Table 5. Results of Regression Analysis for Variables Predicting Faculty Stress.

	Variable	Standardized regression coefficients (β)
Block 1	Sex: Female	.060***
	Race: White	.005
Block 2	Subtle discrimination	.119***
Block 3	Tenured	-.022
	Salary	.014
	Academic rank	.051*
Block 4	Administrative tasks	.161***
	Teaching and research	.353***
Block 5	Community college	-.005
	Selectivity	.003
	Control	.030
	University	.009
	Size	-.037

*$p < .05$ **$p < .01$ ***$p < .001$

Multiple R	.530
R-Square	.281
Adjusted R-Square	.278